

horn of the Nos. 1 & 2 types that I have seen measured 14 inches in length, measured in the manner (already explained) that we measure this type, and this means a smaller horn than a 12·5 horn of the No. 3 type measured as we measure these.

However large the horn of the No. 3 type, it can be readily taken off its core, which is of the shape figured by Milne-Edwards; however small the horns of a No. 2 type, it is always impossible, owing to the twist in the cores, to get the horns off them.

The peculiar shape of what I suppose to be the male horns is just what one would expect to be developed in males butting together; the females do not require to fight, and hence the total absence of that great thickening to the front and close approach which the horns of the male show at that precise point where the shock of battle has to be sustained.

As to the pelage, I cannot yet be certain; the black or blackish heads are constant, from kids to the largest males, and (*selon moi*) females; but the body in some is a yellow dun, much as in Milne-Edwards's plate, while in others it is a deep dusky reddish brown, with a great deal of black intermingled, and some intermediate shades occur. These differences are not, I think, due either to age or sex, but are, I believe, seasonal.

2. Notes on some Species of South-African Snakes. By  
EDMOND SYMONDS, of Kroonstad, Orange Free State.  
(Communicated by J. H. GURNEY.)

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[The following notes were accompanied by specimens of the Snakes referred to, which have been kindly identified for me by Dr. Günther. With one exception, they were all collected in the vicinity of Kroonstad, where Mr. Symonds resides.—J. H. G.]

1. CORONELLA CANA.

Length from head to end of tail 4 feet 6 inches; from vent to tail 8 inches.

Tail rather short and stumpy.

Iris brown; pupil circular.

Teeth.—Lower jaw a single row on each side, about 12; upper jaw a double row on each side, about 8; no fangs posterior or anterior.

Colour very dark brown, on the back almost black, sides rather lighter, belly a glossy slaty black.

*Habits*.—As a rule rather sluggish until thoroughly roused and irritated, when it strikes rapidly, but will always get away if possible; does not dilate the neck. Common near Kroonstad, but not so common as the copper-coloured variety; one I had in a cage for some time at frogs.

The Dutch give them the name of "Cobra Papl;" others call them "Mole-vreter." I think they are harmless.

In this specimen a small gland, solid, about the size of a small pea, was found just under the skin at the posterior end of the upper maxilla on both sides.

*A second specimen.*—Length 4 feet 10 inches; from vent to tail 12 inches.

Back dark reddish brown, sides dull salmon-colour, centre of belly slate-blue; on the sides of the belly-plates a row of dark spots; the whole skin very glossy during life.

*A third specimen.*—Length 4 feet 7 inches; from vent to tail 10 inches.

Back yellowish brown, very like the colour of sandy ground and difficult to see when the Snake is not moving; from its similarity to the soil; belly bright yellow with a pinkish tinge, and an irregular black mark down the centre of the belly on the upper edge of the shields; this begins 3 or 4 inches beyond the neck, becoming more and more marked towards the vent, where it becomes a narrow line on the lower edge of the shields; beyond the vent it disappears.

The shields below the vent are double, and each shield has a dark brown line at its lower edge.

This colour is not common; the specimen sent was killed close to the river at Kroonstad.

*A fourth specimen, immature.*—Length 23 inches; vent to tail  $4\frac{3}{4}$  inches.

Back yellowish brown, with black spots forming a zigzag line down the centre of the back; belly dirty yellow with a reddish tinge.

Killed whilst going into a house in the town of Kroonstad.

## 2. PSAMMOPHIS CRUCIFER.

Length  $26\frac{1}{2}$  inches; from vent to tail  $6\frac{1}{4}$  inches.

Head long, flat and small.

Teeth.—Upper jaw with two rows on each side; lower jaw with one row on each side; the exterior row on the upper jaw has the last tooth larger than the rest.

Pupil circular, iris brick-red. Neck slightly narrower than the head.

Colour.—Back pale olive greenish-brown, with one broad stripe down the back and a narrow stripe on each side chocolate-brown; belly dirty white, with a few black spots extending from the neck halfway to the tail.

*Habits.*—This seems to be a kind of grass-snake and is rather common here; it eats frogs, but, on the other hand, a specimen  $18\frac{1}{2}$  inches long was found dead in the mouth of a large bull-frog, which much resented being done out of its meal.

## 3. PSAMMOPHIS SIBILANS.

This species and the preceding are known here under the name of Schaaf-sticker (sheep-sticker).

Length 31 inches; from vent to tail 8 inches.

Head long, almond-shaped, supraorbital ridge very prominent.

Teeth.—Upper jaw with two rows on each side ; lower jaw with one row on each side.

Pupil circular ; iris light brown, with the inner edge yellow.

Colour.—Back striped as follows—in the centre a yellow line, then a brown stripe, next to that an orange one, then an olive-green stripe, next to that a very clean dead-white one adjoining the belly, which is greenish brown ; all the colours being very bright and clear.

*Habits*.—Found in the long grass, very quick in its movements ; and said to kill sheep !!

I had one of these Snakes for some time in confinement, but it would not eat, though it drank a little milk ; I never saw it strike or try to bite. I often handled it, and it got tame after a time.

#### 4. LEPTODIRA RUFESCENS.

Length  $18\frac{1}{2}$  inches ; from vent to tail  $2\frac{1}{2}$  inches.

Head heart-shaped, like a Viper's.

Teeth.—Upper jaw with two rows on each side, at the back of the exterior row a large tooth which is movable ; lower jaw with one row on each side. At the back of the jaws there was a small solid body rather like a gland, but I could not find a duct.

Pupil a vertical slit.

Colour.—Back and sides light greenish brown with fine white spots ; belly dirty white.

*Habits*.—Very similar to those of the Vipers ; it coils itself up, making a hissing noise loud for its size ; it seems sluggish, but strikes very suddenly and rapidly ; it is often found at night in little foot-paths, and is hence called by the Dutch “Padlooper,” or “Path-walker ;” it eats frogs.

#### 5. LAMPROPHIS AURORA.

Length 24 inches ; from vent to tail  $3\frac{1}{2}$  inches.

Head flat and blunt ; body thick and tail stumpy.

Teeth.—Upper jaw with two rows on each side ; lower jaw with one row on each side.

Pupil circular.

Colour.—Back olive-green, with a light yellow stripe down the centre ; belly yellowish white.

I have only seen two specimens of this Snake, both killed close to the town of Kroonstad ; I know nothing of its habits.

#### 6. NAJA HAJE.

This specimen was given to me by Mr. Thomas Ayres, of Potchefstroom ; I regret that I have never seen this species alive.

#### 7. SEPEDON HÆMACHATES.

Length 4 feet 2 inches ; from vent to tail 8 inches.

Head flattened, triangular. Neck narrower than the base of head, flattened out like a hood when disturbed.

Teeth.—One palatine row on each side of the upper jaw; in front, on each side of upper jaw, a conical hollow tooth, immovable, slightly curved, and partially covered by the gum, which is apparently retractile; lower jaw with one row on each side. Behind the jaws is situated, one on each side, a gland or bag containing a jelly-like fluid, with a duct leading to the large tooth in the upper jaw; the lining membrane of this gland is rather gelatinous; on pressing the gland fluid oozes out of the tooth; the gland, which is almond-shaped, rounded at the posterior end, lies between two small muscles, the fibres of which cross one another, apparently acting as an ejector or compressor.

Pupils circular.

Colour.—Back a dull slaty black; belly bright glossy black, with two white bands, the first 6 inches from the nose, consisting of about four shields, beyond which the white colour does not extend, these are followed by four black shields, and then by the second white band consisting of about five shields; the shields below the vent are double.

*Habits.*—This is one of the commonest Snakes about Kroonstad; it often does not move until it is approached pretty closely, when it will creep into a hole if not molested, but if frightened stands up with neck much dilated, and if, in trying to hit it, you miss it, it comes straight at you rather rapidly and will spit with remarkable accuracy for your face; one that I caught alive spat 5 feet. The fluid seems acrid and may blister slightly on a tender skin; if it goes into the eye, it occasions a good deal of smarting for perhaps a day. These Snakes are said to be very poisonous, but I know of no authenticated case of any one being bitten, and, according to my experience of several live ones that I have had, they very rarely bite, but always spit until the saliva is exhausted. On several occasions I gave them live mice for food, and they have spat at them until their fur was quite wet; but only on one occasion did one of them bite a mouse, and then the mouse rolled over dead instantly. They would not eat a mouse, but seemed very fond of frogs; they are also rather fond of hen's eggs, and I have seen them curled up on a nest of eggs.

These Snakes do not strike with very great rapidity, and certainly not with the accuracy of a Puff-Adder (which is not only most accurate but also strikes with fearful rapidity). They grow to a good size, the largest I have seen being nearly 6 feet long; the younger ones are of a grey-brown colour mottled with black. They generally live in holes, but sometimes take to water and swim well. Their Dutch name is "Ringhals."